HAMILTON HEALTH SCIENCES
New Investigator Fund - Application Form

FORM REVISED – June'09

Principal Investigator Information **CV Attached** ☒
Name: Dr. Karen Bailey
Profession/Level of Training: MD **Research Institute/Centre:**
Medical Department or Professional Discipline: Pediatric General Surgery

Work Address: MUMC 4E4 **Area/Location:** Mumc 4e
Effective Jan 1/04 Juravinski Cancer Centre officially became part of HHS Henderson Site

Extension/Telephone Number: (905)521-2100 x75231
Email Address: kbailey@mcmaster.ca

Mentor Information **CV Attached** ☒
Name: Dr. Chuck Cunningham
Profession/Level of Training: PhD **Research Institute/Centre:**
Medical Department or Professional Discipline: Psychiatry And Behavioural Neurosciences
Research Specialty/Area: Children's Mental Health **Location:** Chedoke Hospital
Specify:
Work Address: 565 Sanatorium Rd, Evel Bldg **Area/Location:**Rm 163
Extension/Telephone Number: 77307 **Email Address:**cunnic@hhsc.ca
MENTOR MUST REVIEW FINAL APPLICATION, PRIOR TO SUBMISSION. **Date Reviewed:** Sept 26, 2010

Name of Co-Investigator(s) *[name, professional designation and % of contribution to project]*

1. Katherine Morrison, pediatric endocrinologist 10**% of research**
Role Description [maximum 100 characters]
Medical management of pediatric obesity expert

2. Khalid Al-Harbi 5**% of research**
Role Description [maximum 100 characters]
Pediatric general surgeon, medical expert

3. **% of research**
Role Description [maximum 100 characters]

4. **% of research**
Role Description [maximum 100 characters]

5. **% of research**
Role Description [maximum 100 characters]

Title of Research Project [maximum of 100 characters]
Decision Making, Attitutudes, and Knowledge Aquistion Amoungst Clinicians Treating Pediatric Obesity in Canada
Key Words [3 words]: pediartic obesity, discrete choice conjoint analysis, decision making

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Has this project been submitted elsewhere for support? ☒Yes ☐No
If Yes **where:** Hhs Nif
when: March 2010

response: Denied

Reviewed by the Research Ethics Boards (REBs) ☐ Not Applicable

Appropriate letters of approval are required before funds can be released to projects receiving awards.

				DD/MM/YY
1. Approval received from Human REB	☐ No	☐ Yes	☒ Pending, date:	01/01/11
2. Approval received from Animal REB	☐ No	☐ Yes	☐ Pending, date:	

HHS Program(s) or Services(s) proposed research project is linked/related to:

[Please select the most appropriate that is/are applicable]

Clinical Programs

- ☐ Cardiac & Vascular
- ☒ McMaster Children's Hospital
- ☐ Oncology
- ☐ Neurosciences & Trauma
- ☐ Rehabilitation & Orthopedic
- ☐ Mental Health
- ☐ Adult Specialty Services (Digestive Diseases/Women's Health)

Clinical Services

- ☐ Diagnostic Services
- ☐ Emergency Medicine
- ☐ HRLMP (Laboratories)
- ☐ Peri-Operative (surgery)

Budget Attached ☒ [Pages 4 & 5 of 5) Complete the NIF Budget Form and attach to this application]. NOTE: Personnel expenses need to be validated by Mandeep Malhotra, Human Resources Analyst – malhotrm@hhsc.ca . This requires 3-4 weeks lead time.

Relevance to HHS Clinical Mission and Research Strategic Plan

Provide a brief summary, in layperson terms, of your project and the relevance to the clinical mission and research strategic direction of HHS to be used for publication purposes. [maximum 150 words]

This project aims to provide the first of its kind evidence that will help to understand the decision making process, attitudes and knowledge acquisition behaviors of clinicians currently involved in caring for pediatric obese patients. This study borrows successful methodologies from pediatric psychology and applies these methods in a new and innovative way to understanding pediatric obesity. This study is "first stage" front line research that will advance and create new knowledge aimed at informing patient care, work in a national, multi-site, collaborative approach, and will provide an essential mentoring/learning environment for a novice researcher. This research will be the first of its kind aimed at both surgical and non-surgical treatment modalities and clinicians. This research will provide valuable information for the planning of future pediatric obesity treatment programs, and provide the building blocks for future research.

Research Outline

1. Provide details of proposed research study. Research proposal is limited to 5 pages in length using Arial 10 font with 1 inch margins.
2. References are limited to 2 pages in length, using Arial 10 font with 1 inch margins.
3. Only 3 Appendices may be included, each limited to 2 pages in length using Arial 10 font with 1 inch margins.
4. Scientific and layperson summaries are each limited to 1 page in length using Arial 10 font with 1 inch margins.

5. Complete checklist on page 3 of this application.

Deliverables - Milestone Table

Identify key milestone targets that are set to be achieved at six months and one year for this project.

Timeline	Milestone Targets (brief overview description)
6 months	Survey will be developed, piloted and sent to partiicpants. A 50% response rate is anticipated at this time.
1 year	Data collection complete, data base cleaned and ready for analysis. A 70% response rate is anticipated at data collection completion.

e-Submission Requirements and Checklist

Only complete applications will be accepted (refer to specifications listed under Items #2 and #3 below). All incomplete submissions will be returned. Applications are to be submitted no later than **4pm** on either **March 31st** or **October 1st** of each year. **NOTE: Should either of these dates fall on a recognized holiday and/or weekend day, the deadline is extended to the next business day.**

Applicants are responsible for:

- Ensuring a complete submission is provided per the specifications and order that is listed below.
- Following up with authors who are providing letters of assessment and support letters and ensuring they are received by the respective deadline date.

1. Budget Form – research **personnel costs MUST BE processed and approved by HHS Human Resources** to validate role and appropriate salary scale. This process requires 3-4 weeks lead time. Please contact Mandeep Malhotra at ext. 74855 or malhotrm@hhsc.ca

2. A complete application must include documents 1 through 9, as per below formatted as ONE pdf file (requiring that all documents be individually converted to pdf and then merged into one pdf file) **AND** include original MS Excel format of Budget Form & Justification. Both files (all inclusive pdf and MS Excel Budget) are to be sent as TWO email attachments to NIF@hhsc.ca. Applicants are restricted to sending ONE pdf email (with the two attachments) with the subject line marked "NIF – surname of applicant".

3. Checklist and order for a complete e-submission as outlined below. All documents listed below **MUST BE** typed in Arial 10 font with 1-inch margins; converted into pdf format and merged as ONE file and submitted electronically via email to NIF@hhsc.ca

Applicants are RESPONSIBLE for sending the following documents 1 through 9 (in the order specified below) as ONE pdf file PLUS original MS Excel Budget file:

1. Application Form (pages 1-3) ☒
2. Budget Form & Justification (pages 4 & 5) include original MS Excel file ☒
3. Role Description of Principal Investigator (1page) ☒
4. Role of Scientific Mentor (1 page) ☒
5. Scientific Summary (1 page) ☒
6. Layperson Summary (1 page) ☒
7. Research Outline:
   (5 pages, excluding references/appendices/collaboration letters) ☒
8. Up-to-date CV of Applicant (CHIR Common CV format preferred) ☒
9. CIHR Common CV of Scientific Mentor ☒

Mentor and Support Letters MUST BE sent by each individual author, as a pdf file, via email to NIF@hhsc.ca with the subject line marked "NIF – surname of applicant", addressed to the attention: Dr. Jeff Ginsberg, NIF Chairperson – Scientific Review Board, Professor—Department of Medicine, McMaster University.

10. Letter of Assessment from Scientific Mentor ☒
11. Two letters of support:
    (from Research Program Director **AND** Academic Dept Chair or Dean) ☒

(DD/MM/YY)
Date 01/10/10

HAMILTON HEALTH SCIENCES
New Investigator Fund - Budget Form

Form Revised - Jun'09

PRINCIPAL INVESTIGATOR: Dr. Karen Bailey

Budget Details		START DATE Jan-11	END DATE Jan-12
A. PERSONNEL	**Hours**	**SALARY**	**TOTAL**
APPROVAL and COSTING for this section is required by HHS Human Resources Mandeep Malhotra (malhotrm@hhsc.ca).			
Sr.Statistician, CR1003, $36.99/hourly. Total cost includes: lieu pay, CPP, EI, WSIB and 6%Vacation accrual	20	$739.80	$947
Research Coordinator, CRO701, $28.0820/hourly. Total cost includes: lieu pay, CPP, EI, WSIB and 6%Vacation accrual	750	$21,061.50	$26,959
		Total Personnel	**$27,906**
B. SUPPLIES (provide details and justification where relevant)			
Communication			$1,000
Administration supplies			$1,000
		Total Supplies	**$2,000**
C. EQUIPMENT (provide justification for equipment purchaes of $500)			
		Total Equipment	**$0**
D. OTHER EXPENSES (eg, services, rental, etc.)			
Please note: Knowledge transfer costs (publication/conference & presentation) are not eligible at application, but may be requested separately upon completion of the project.			
Survey Development and Analysis			$15,000
Travel			$5,000
		Total Other Expenses	**$20,000**
TOTAL AMOUNT REQUESTED			**$49,906**

Budget Justification provided on Sheet 2 (page 5 of 5) of this excel file

Budget Justification

Project Title:

Note: Enter text in Row 4 only -- it has been formatted to wrap text.

Research Support: We have budgeted 750 hours of research support. Thsi includes the time to conduct the interviews, collect the data, prepare study reports, contact and follow up with participants, and once the survey is finalized the RA will contact and collect survey data for our 1000 participants through consultation with the patient centred research centre, who has extensive expereince it was felt that 750 hours was appropriate.
Communication: As this is a multicenter study across Canada, $1000 is requested for monthly conference calls with key study specific persons at each medical school. **Administration Supplies:** $1000 is requested to cover the costs of print materials, postage, faxing costs etc. associated with the survey. **Survey Development and Analaysis:**The patient centered research unit under the guidance of Dr. Charles Cunningham will consult in iterative meetings on the qualitative scripts for stage 1. These key information interviews will inform the attribute development and survey design of Stage 2. The unit will then consult with the team on attribute and survey design. They will provide the computers, market research software and the technical support needed to complete t
Travel: We request $5000 to cover the cost of travel to study centres for urgent study issues if necessary to ensu

The Principal Investigator for this study will be Dr. Karen Bailey. After completing a Pediatric General Surgery clinical research fellowship in June 2004 at The Children's Hospital of Eastern Ontario she went on to complete a 2 year clinical fellowship in Pediatric Surgery at The Hospital for Sick Children under the supervision of Dr. Jacob Langer. Dr Bailey worked for three years at the Janet Weis Children's Hospital, Geisinger Medical Centre in Danville, Pennsylvania. During her time in Pennsylvania she worked as an Associate Pediatric Surgeon, was Chair of the Pediatric Bariatric Surgery Multidisciplinary Working group, Member or the Pediatric Core Trauma committee, PICU Committee, Pediatric Quality Improvement Group and Children's Hospital Operations Group. Dr. Bailey participated in multiple quality improvement and assurance projects, and in Children's Oncology Group clinical trials.

Dr. Bailey joined the McMaster's Children Hospital as an Assistant professor in the Faculty of Health Sciences, Director of the Pediatric Trauma Program and Pediatric Surgery Clerkship Coordinator in January 2010. She is an active member of the McMaster Pediatric Surgery Research Collaborative, the McMaster Pediatric ER Operations Committee and the McMaster Children's Hospital Morbidity and Mortality Review Committee. Dr. Bailey has published and presented several clinical research papers over the last 5 years, and has experience with mentoring resident research projects. Dr. Bailey has completed additional training in bariatric surgery including, advanced bariatric surgery, controversies in bariatric surgery, basic bariatric statistics, essentials of bariatric surgery, advanced bariatric life support, and has completed credentialing for the surgical placement of lap bands by Allergan. Dr. Bailey also completed a mini fellowship in bariatric surgery under the supervision of Dr. Anthony Petrick, the Surgical Director for Minimally Invasive and Bariatric Surgery, at Geisinger Medical Centre.

In this study, Dr. Bailey will take on the overall responsibility for this project. She will oversee all aspects of the research project, including study start-up, patient recruitment, data collection, knowledge dissemination, and all study related meetings and presentations. Dr. Bailey will meet weekly with the Research Coordinator to review any study related questions, concerns and challenges and will play a pivotal role in this studys success. Dr. Bailey will dedicate 20% of her time to this study and will chair the Steering Committee. Dr. Bailey will also be in close contact with her scientific mentor, Dr. Charles Cunningham, to extensively review the protocol and to seek guidance in the study start-up phase and through out the study. Dr. Bailey will also be in close contact with her clinical mentor, Dr. Katherine Morrison to discuss any clinical concerns or challenges that arise. Dr. Bailey will also be in contact with the Chairs and Scientific Directors of the Canadian Obesity Network (see letter of Support in Appendix III) Dr. Bailey will also oversee that all members of the study will be kept informed and up to date with the success of this study.

Dr. Cunningham is a psychologist at McMaster Children's Hospital and a Professor in the Department of Psychiatry and Behavioural Neurosciences at McMaster University, where he holds the Jack Laidlaw Chair in Patient-Centred Health Care.

Dr. Cunningham developed and has conducted research examining the utilization, cost effectiveness, and outcome of large group, community-based COPE programs for parents of children with disruptive behavior disorders. He has been involved in the development and evaluation of school-based student-mediated conflict resolution programs involving students in the reduction of playground violence and is a co-investigator on a Social Sciences and Humanities Research Foundation Community-University Research Alliance grant to develop more effective bullying and violence prevention programs. He also led the development of the Brief Child and Family Phone Interview, a computerized children's mental health screening and outcome measurement tool used by the provinces of Ontario and British Columbia.

Dr. Cunningham's current research includes an evaluation of the Brief Child and Family Phone Interview and the use of consumer preference modeling strategies to involve parents and professionals in the design of more effective children's mental health information transfer strategies. Both of these projects are funded by the Canadian Institutes of Health Research. He is also involved in longitudinal studies funded by the Ontario Mental Health Foundation which focus on the social and psychophysiological correlates of the early anxiety disorders selective mutism and social phobia.

Dr. Cunningham will play an important role in the supervision and guidance of this studies methodology. Dr. Cunningham and his team will be primarily responsible for the survey development and analysis. Dr. Cunningham will dedicate 10% of his time to this project and will attend all study specific meetings. Dr. Bailey will work closely with Dr. Cunningham in the application of the Theory of Planned Behaviour to this study as well as the utilization of discrete choice conjoint methods and latent class analysis.

Background: Obesity is now reaching epidemic proportions in both developed and developing countries and is affecting adults, children and adolescents. According to the 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children, obesity has become "the most prevalent nutritional problem in the world, eclipsing under nutrition and infectious disease as the most significant contributor to ill health and mortality." Our national study will survey Canadian physicians who work with children ages 2-18 to understand their current attitudes, preferences for knowledge acquisition, baseline knowledge of obesity and treatment options, patient demographics, and treatment referral patterns of morbidly obese Canadian children and adolescents.

Study Questions: What are the attitudes towards obesity treatment amongst academic family physicians, pediatricians and pediatric surgeons and what is their knowledge of childhood obesity (health consequences, treatment options, patient demographics), what referral patterns do they demonstrate and what are their preferences for knowledge acquisition? We propose that understanding the answer to these questions is an essential step in improving childhood obesity treatment and breaking down the barriers to children receiving effective obesity treatments in Canada

Theoretical Framework: Our study is based upon the Theory of Planned Behavior (TPB). TPB is a theory about the link between attitudes and behavior, and suggests within the context of this study that the decision to refer an obese pediatric patient for treatment is influenced by expectations regarding the treatment's effectiveness ("Attitudes"), social pressures ("Subject Norms"), and beliefs of the individual's self-efficacy (Perceived Behavioral Control).

Sampling Frame: We will survey a sample of pediatricians, pediatric general surgeons, and family physicians associated with tertiary academic teaching hospitals across Canada, which will include members of the Canadian Obesity network. Our sampling will be stratified across these centers and the Canadian Obesity Network.

Methodology: We will use a discrete choice conjoint experiment to study factors influencing the decisions of physicians in referring obese pediatric patients for treatment. Choice-based conjoint methods consist of a series of tasks and participants in the survey choose between options composed of experimentally varied attribute combinations. Choice tasks prompt participants to evaluate each attribute in the context of others and to weigh the tradeoffs associated with competing design alternatives. The current study is, to our knowledge, the first application of these methods which will be used in the development of pediatric obesity programs. The survey will be constructed using the attributes of pediatric obesity treatment programs and be performed by asking a series of 15-20 attitudinal questions with lickert scales and 15-20 discrete choice tasks.

Questionnaire Development: The questionnaire development is grounded in the theory of planned behaviour. The questions will examine participants' behavioural beliefs, normative beliefs and control beliefs as they relate to the treatment of obesity in children. An attribute list of obesity treatments will be generated and preference data collected. Under each of these constructs further segmental questions will be derived and various level values assigned to these attributes. These segments and associated responses require respondents to make discrete choices and establish preferences that form the basis for our analysis.

Data Analysis: The collected survey data will be free of personal identifiers and will be stored in a password protected data base. The survey results will be analyzed using a computationally intensive method called the hierarchal Bayes estimation. Hierarchal Bayes will be used to estimate zero-centred utility coefficients and importance scores for each participant using Sawtooth software. The utility coefficients reflect the relative influence of each attribute level on treatment preferences. Importance scores show the relative influence of variations in the levels of each attribute on participant choices. We will compute latent class segmentation analyses which will examine clusters of physicians with various treatment preferences. Chi square and analysis of variance will be used to look at demographic and attitudinal coordinates.

Study Impact: This ground-breaking application of choice based analysis has the ability to powerfully impact how we approach, design and deliver pediatric obesity treatments across Canada. Identified knowledge gaps during this study can be translated into effective and targeted educational tools and programs to meet the specific preferences and needs of physicians across Canada. This study will lay the foundation for future studies to evaluate the needs of patients and parents which we believe is essential for improving engagement and adherence to obesity treatments. In a time when the costs of national health care are soaring and resources are limited, we must be innovative and develop strategies to facilitate and deliver valuable obesity treatments for children in Canada.

What is the problem to be addressed?

Pediatric obesity is a very serious and rapidly growing problem in Canada and around the world. The number of children who are overweight has been rising quickly in Canada and doctors are struggling to effectively treat these children. Previous research shows that treatments for obesity including diet and exercise, allows most adults and children to lose weight but often only for short periods of time. Weight loss has been better achieved and maintained in adults when they have weight loss surgery. Similar results have been seen in studies with teenagers, although many doctors are reluctant to send children for weight loss surgery. There are many factors which cause obesity including eating more food than is needed, genetics, lifestyle, society and cultural influences, hormonal causes and family characteristics. Obesity is associated with many medical problems including high blood pressure, diabetes, joint problems, sleep apnea, ovarian cysts, psychosocial problems and early death. Weight loss can lead to a decrease in these medical problems.

Why is this study being done?

The purpose of this study is to understand how physicians who work with children at the medical schools across Canada make decisions to treat obesity, what they know about various obesity treatment options, how they prefer to learn new information and their current attitudes about obesity treatment.

How is this study being conducted?

This study will be performed by surveying a sample of physicians across Canada using a web-based questionnaire which has been developed using the Theory of Planned Behaviour (TPB). This model has been used successfully in other medical research studies to understand physician behaviours.

What will happen with the results of this study?

The results of this study will help us decide how to design effective teaching tools for doctors as they are needed. This study will help us understand what is needed to help physicians provide obesity treatment for children across Canada.

October 1, 2010

J. Ginsberg, M.D., F.R.C.P.(C)
Professor, Medicine
Chair, Scientific Peer-review Board
HHS New Investigator Fund

RE: NIF Resubmission

Dear Dr. Ginsberg,

Thank you for your Committee's review of the study entitled, "Understanding Decision Making, Attitudes and Knowledge Acquisition Among Clinicians treating Obesity in Canada: A National Survey" which was submitted to the HHS NIF March 2010 competition.

In response to reviewing the comments provided by the Committee I met with you to discuss the concerns of our research team. As per our discussion I have included a brief summary as well as a revised application for the Committee's consideration. The specific areas I would like to draw the Committee's attention to are as follows:

1. The Committee suggested that this project be first run as a pilot study. When reviewing this with both Dr. Morrison, Dr. Cunningham and yourself, it became apparent that this project's resource requirement would be the same for a pilot as it would be for a larger study. Also, I agree that a pilot for the purposes of providing essential feasibility data such as recruitment rates and protocol adherence statistics in which to root a larger study in (as in the case in many randomized controlled trials) is important, however, the nature of this study does not have the same organizational structure. If the Committee's concern was the lack of confidence in the success of this study due to a lack of relevant ground work, or a concern that the original project was too large in scope, I have proposed this study as a series of stages. Each stage of the study builds upon the last, and therefore this application will focus on stages 1 through 3 on the local and provincial level. The next step would be to implement this study nationally. These changes are reflected in scientific summary under Section 4.0.

2. The Committee expressed concern regarding the lack of budget feasibility data. To address this concern I have added costing information from Dr. Cunningham's research team as they conduct this type of research regularly. This is reflected in the updated budget justification section.

3. The Committee also raised concerns over the lack of a power calculation, and through our discussion it became evident that the Committee was specifically looking for Type I and Type II error statistics. Again, this approach to determining a responsible sample size is extremely relevant and important for other study designs such as randomized trials. However as this study is not specifically trying to address a clinical efficacy question, but instead draws on methodology from psychology these types of calculations are simple not available or appropriate. There was a formal sample size included in our previous submission, with a reference to the literature which supports this methodology for this particularly study design. In an attempt at clarity, we have also augmented the

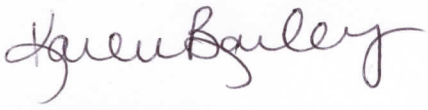
4. entire study design section to improve the readability and clarity of our intended methodology and analysis. We have also included a new Appendix which provides a schematic overview of this methodology, which is new to surgery, in an attempt provide a more comprehensive application.

5. The Committee was concerned with Dr. Morrison's role in the project. Dr. Morrison is a clinical expert in the non-surgical treatment and understanding of childhood obesity and therefore, in agreement with the Committee's recommendation, I have added her with her approval as a Co-Investigator.

6. The Committee's review also indicated concern over Dr. Khalid Al-Harbi's role in the project a he has left the country. Dr. Al-Harbi was the initial Investigator who conducted the foundational work for this project. Dr. Al-Harbi will also be involved with this study through participation in study meetings, reviewing the finalized protocol, reviewing the results and interpreting these in the final manuscript. To recognize his efforts thus far and in the future I believe it is best to keep him as a Co-Investigator in this study.

I would like to extend my personal appreciation for both the thoughtful review from the Committee, as well your time to meet and discuss this project with me. It is my belief that understanding childhood obesity in Canada is essential to treating this growing epidemic, and introducing a highly rigours and successful methodology such as discrete choice conjoint analysis to the field of Health Sciences will be an enlightening and important addition.

Many thanks for your consideration,



Karen Bailey MD, FRCSC
Assistant Professor, Faculty of Health Sciences
Pediatric General Surgeon
Pediatric Trauma Program Director
Department of Surgery
McMaster University

Understanding Decision Making, Attitudes and Knowledge Acquisition Among Clinicians Treating Childhood Obesity in Canada: A Choice Based Conjoint Survey

1.0 Statement of Objectives:

This choice based conjoint survey will study a sample of physicians who provide care for children ages 2-18 to understand their attitudes, preferences for knowledge acquisition, knowledge of obesity and treatment options, patient demographics, and treatment referral patterns of morbidly obese children and adolescents in Canada. It is essential to understand this information in order to develop innovative strategies to break down the barriers to children receiving effective interventions for obesity in Canada. The growing epidemic of pediatric obesity with the resulting complications of diabetes, hypertension, dyslipidemia, degenerative joint disease, apnea and early death must be addressed in Canada.

1.1 Study Questions:

Family physicians, pediatricians and pediatric surgeons at academic centres are some of the key stakeholders in the education of healthcare providers who care for children and provide care to some of the most seriously ill children in Canada. What are these physicians attitudes and knowledge of childhood obesity (health consequences, treatment options, patient demographics), what referral patterns do they demonstrate and what are their preferences for knowledge acquisition? We propose that understanding the answer to these questions is an essential step in improving childhood obesity treatment and breaking down the barriers to children receiving effective obesity treatments in Canada.

2.0 Brief Review of Literature:

Obesity has reached epidemic proportions in Canada, and is a problem that globally affects children, adolescents and adults. According to the 2006 Canadian clinical practice guidelines on the management and prevention of obesity in children and adults, obesity has become “the most prevalent nutritional problem in the world, eclipsing under nutrition and infectious disease as the most significant contributor to ill health and mortality.” The report states that obesity is the key risk factor for many chronic and non-communicable diseases [1]. This rapid rise in obesity among children and adults has been declared a worldwide epidemic.

The prevalence of obesity (Body Mass Index (BMI) >95% for age and gender) in children has increased dramatically. The Canadian Community Health Survey estimates 1 in 4 (26%) children and adolescents age 2-17 are overweight, with the national obesity rate rising from 2% to 10% in boys and 2% to 9% in Canadian girls. In Canada 55% of First Nations children on reserves and 41% living off of reserves are overweight or obese [1, 7]. In America obesity prevalence over three years doubled for children age 6-11 and tripled for adolescents between the ages of 12-19 as of 2006 [2-4]. In 2006 an estimated one million adolescents between the ages of 13 and 21 had a BMI greater than 35 kg/m^2 [5]. More recently the Teen-LABS study, the first multicentre longitudinal assessment of bariatric surgery in children, estimated two million children and teens in the United States have a BMI ≥ 40 kg/m^2 [6].

Childhood obesity is associated with co-morbidities traditionally seen in obese adults. An American study concluded that more than 60 percent of overweight children 5 to 10 years of age had at least one risk factor for cardiovascular disease. They suffered from high blood pressure, high serum insulin levels or dyslipidemia, and 25 percent had two or more of these risk factors [8]. A study of diabetic children and adolescents in North America in 2000 determined that obesity is now associated with 45% of all newly diagnosed diabetes in pediatric patients [9]. Haynes in 2005 documented a link between joint problems, obstructive sleep apnea, psychosocial problems, metabolic syndrome, polycystic ovarian syndrome and premature mortality to childhood obesity [10].

Wand and Dietz used the National Hospital Discharge Survey (1979–1999), to examine the trends of obesity-associated diseases in youths aged 6-17 and the related economic costs. The results of the study indicated that from 1979–1981 to 1997–1999, the percentage of discharges with obesity-associated diseases has increased in the United States. The discharges of children with diabetes nearly doubled (from 1.43% to 2.36%), obesity and gallbladder diseases tripled (0.36% to 1.07% and 0.18% to 0.59%, respectively), and sleep apnea increased fivefold (0.14% to 0.75%). Ninety-six percent of discharges listed obesity as a secondary contributing diagnosis in 1997-1999 out of 42,597 discharges. Obesity-associated annual hospital costs increased more than threefold; from $35 million (0.43% of total hospital costs) during 1979–1981 to $127 million (1.70% of total hospital costs) during 1997–1999 [11].

Current treatment for obesity in children includes both medical and surgical modalities. There are several systematic reviews exploring adult bariatric surgery; however this is a relatively new intervention in children. A recent systematic review and meta-analysis examining the published evidence pertaining to bariatric surgery in children found 8 studies related to laparoscopic adjustable gastric banding (N=352), 6 studies on Roux-en-Y gastric bypass (N=131), and 5 studies of other surgical procedures (N=158). The systematic review concluded that bariatric surgery in the pediatric patient does result in sustained and clinically significant weight loss [12]. In terms of the medical treatment options, a Cochrane review of interventions for preventing obesity in children in 2009 showed that "some studies that focused on dietary or physical activity approaches showed a small but positive impact on BMI" [15], While another Cochrane review which specifically looked at interventions for treating obesity in children found that "combined behavioural lifestyle interventions compared to standard care or self-help can produce a significant and meaningful reduction in overweight in children and adolescents. Furthermore, high quality research that considers psychosocial determinants for behavior change, strategies to improve clinician-family interaction, and cost-effective programs for primary and community care is required" [16]. Given the level of evidence supporting both medical and surgical treatment options for treating childhood obesity, it then becomes imperative to understand how clinicians are utilizing and referring their patients to these different treatment modalities.

2.1 Understanding Clinician's Knowledge and Referral Practice of Childhood Obesity Treatment Options: Preliminary Research Results

A survey in 2005-2006 sampled Canadian community pediatricians and family physicians, it identified some of the key barriers in treating childhood obesity: too few funded dieticians and weight management programs, lack of efficacy from their efforts, time constraints and limited training [59]. This survey was conducted prior to the publication of the Canadian Clinical Practice Guideline for the Prevention and Management of Obesity in Adults and Children, and bariatric surgery was not discussed in this survey. **We need to better understand the barriers to the treatment of childhood obesity, including bariatric surgery, to determine if the training needs have changed since the guideline was published and to identify which tools and training are needed to address referral or treatment barriers.**

The short term effectiveness of bariatric surgery for adolescents has been published in the literature since 2004. Although the rates of bariatric surgery are rising globally in this population the utilization of bariatric surgery for adolescents remains low in Canada. Iqbal from the Mayo clinic in Rochester surveyed pediatricians and family practitioners at a single institution to assess their perspectives on pediatric obesity. This survey resulted in several interesting conclusions; **1) *Physicians caring for children are cognizant and concerned about the growing obesity epidemic (82% agreed obesity was a major problem for patients)*, and 2) despite the poor long-term outcomes with non-operative methods (only 1.8% reported satisfactory results) and the high satisfaction with bariatric surgery outcomes (of the physicians who did refer a patient for surgery 84.6% reported satisfactory results), physicians are still reluctant to refer children and adolescents for surgical weight loss procedures, with 88.5% of those surveyed indicating they unlikely or would never refer a patient for surgery [30].** The results of this survey indicates that American physicians are aware of, and concerned about the growing epidemic of childhood obesity, they are not seeing satisfactory results with medical management and many are not referring their patients for surgical treatments. These results in combination with the Canadian survey of community pediatricians and family physicians, clearly indicates that there are barriers to children receiving obesity treatment. It is apparent that further, high quality, research is needed in this area so that treatment barriers can be overcome.

This proposed study uses a rigorous discrete conjoint based survey design to obtain the necessary national perspective of health professionals attitudes related to both medical obesity treatments and bariatric surgery across Canada in the pediatric population. Current evidence indicates that there can be good outcomes with surgery and benefit from combined behavioural lifestyle interventions in adolescents. We need to understand the perspective of health professionals and the barriers to adolescents receiving these promising treatments here in Canada.

3.0 Background: Theory of Planned Behaviour and Conjoint Analysis

Our survey is a discrete conjoint choice based experiment which will allow us to study Canadian physicians who are providing treatment for obese children age 2-18 in academic centres across Canada. The goal of the study is to gain an understanding of their treatment decisions, attitudes and preferences for knowledge acquisition. This discrete conjoint based experiment is based upon the Theory of Planned Behavior (TPB) from the field of psychology. This theory was first proposed by Icek Ajzen in 1985 [31], and is an extension of the Theory of Reasoned Action. TPB is a theory about the links between attitudes and behaviours **(Appendix I)**. Within the context of this study TPB implies that a clinicians treatment decisions for obese children is influenced by expectations about the treatment effectiveness ("Attitudes"), social pressures ("Subjective Norms"), and beliefs about their own abilities ("Perceived Behavioral Control")[32].

The TPB has been proven to be effective in understanding health behaviour [33-35]. Specifically the TPB model has been used in HIV risk behavior research [36], exercise and physiology research [37,38] including two meta-analyses focused on self-determination and health behavior [39], and physical activity [40]. Recently TPB has been applied to understanding clinician's decision making in mental health [41]. Building on the success of this model in mental health clinical decision making, this study uses TPB to help understand the results of our conjoint choice based experimental survey by placing the respondents answers in a successful and applicable theoretical framework for interpretation.

Choice based conjoint (CBC) experiments were first designed in the field of marketing more than 35 years ago and have since been applied successfully to healthcare. Choice-based conjoint methods conceptualize a service (in this study obesity treatment) as a series of multi-level attributes [43]. A pediatric obesity treatment program's attributes may include: ease of making a referral, patient accessibility, costs, patient/parental time demands, treatment benefit, and supporting evidence.

Participants in CBC studies are presented with questions and they must choose between options made up of various attribute combinations [43]. Choice tasks prompt participants to evaluate each attribute in the context of others and to weigh the tradeoffs associated with choosing one option over another **(Appendix II)**. Through the questions asked we will be able to compute internal consistency, the data collected will also be subjected to complex high level Bayesian statistical analyses with highly sophisticated Sawtooth software **(Appendix II)**. Complex choices by design are meant to limit superficial decisions, reveal opinions that influence real world decisions [44], and reduce biases that are based on social desirability [45,46]. As a result these methods have been shown to provide better estimates of a participants' actual behaviour and are far superior to other basic survey designs [47].

Conjoint methods use "decompositional approaches" to simulate preferences for existing programs, predict responses to attributes of new programs, predict the extent that preferred attributes will compensate for critical features with low utility, and estimate the relative influence of attributes on complex decisions [43]. Conjoint methods were developed by mathematical psychologists [48]. These methods are now widely used by health economists [49], transportation economists [50], and marketing researchers [51]. These methods have studied the information preferences of parents of children with mental health problems [52] and used to design prevention programs for parents [53]. In Canada "there is a need for knowledge translation research in obesity and the need for greater collaboration among all sectors of society to effect change in this field" [42]. This proposed study will use the TPB and Choice Based Conjoint methods to help us understand Canadian clinicians and develop new tools and programs to address pediatric obesity in Canada. When physician attitudes and beliefs are understood about effective obesity treatments, novel strategies can be developed to address the barriers which stand in the way of children receiving these effective obesity treatments across Canada.

4.0 Design and Methodology:

This study is broken down into four stages. Each stage will build upon the previous to collectively complete the CBC analysis.

Stage 1: Survey Development - Discrete conjoint choice based survey is developed for the study using the Theory of Planned Behaviour **(Appendix I)** and choice tasks are created using the sophisticated Sawtooth software **(Appendix II)**. The attributes to be studied in the choice tasks are determined by key informative interviews of physicians who actively refer or provide pediatric obesity treatment in Canada.

The survey will include demographic data, 15-20 choice tasks and 15-20 attitudinal Likert scale questions. Constructs used will examine participants' behavioural beliefs, normative beliefs and control beliefs in relationship to obesity treatment in children. This stage is anticipated to take 4 months to complete and will involve interviewing physicians (both medical and surgical) at academic centers across Ontario. The result from Stage 1 will be to have the attribute list and choice tasks which make up the CBC survey. Stage 2 will include the distribution of this survey.

Stage 2: Data Collection - Key contacts are established at each medical school across Canada and are engaged throughout the study by conference calls and emails. In the following stepwise manner the survey will be distributed and data collected in a password protected database free of personal identifiers: i) locally, ii) provincially then iii) nationally, to pediatricians, family physicians and pediatric surgeons associated with academic tertiary care centres across Canada. The survey will be administered using the Dillman method as it has repeatedly demonstrated a high survey response rate greater than 70% [54]. This stage of the study is anticipated to take 4 months.

Stage 3: Data analysis - Data and feedback on the survey will first be examined locally to ensure that the survey and analyses are functioning properly. The data will then be collected and examined sequentially and collectively on a regional, provincial and national level as outlined in Stage 3. Conjoint Analysis will be performed using complex computational analyses with Sawtooth software to calculate internal consistency and Hierarchal Bayes estimations with utility coefficients and importance scores **(Appendix II).** The results will be compiled, published and presented at national meeting. This stage of the project will take 4 months.

Stage 4: Future work - Projected future studies and grants would focus on translating the results of this study about physician preferences and knowledge gaps into targeted educational tools and obesity treatment programs which appeal to physician preferences. Preferences can be used to design pediatric obesity treatment programs and simulate their likelihood to be utilized by physicians. Anticipated future studies and grant applications would examine the attitudes and preferences of patients/parents to ensure pediatric obesity treatment programs engage patients and improve adherence.

4.1 Sampling:

We have defined our study population as pediatricians, pediatric general surgeons, and family physicians associated at academic teaching hospitals across Canada. Our intent is that this sample will be representative of clinicians who are involved in the teaching and shaping of new clinical practices in pediatric care across Canada. A key study contact will be established at each medical school across Canada. These key study contacts will be engaged through study conference calls and emails. The conference calls and electronic communication will be used to discuss the study prior to implementation, to facilitate dissemination, and to follow up on survey completion. The survey will employ the Dillman method for administering the survey as it has repeatedly demonstrated a high survey response rate [54,55]. Sampling will be stratified across these centers and by members of the Canadian Obesity Network as members may display markedly different attitudes and behaviours.

There are no set sample size power calculations for conjoint analysis studies, however there is an accepted rule for this method which is**:** (n x t x a / c greater than or equal to 500), n= number of respondents, t= number of tasks (questions), a= number of alternatives per task excluding the none option, c= largest number of levels in any one attribute when considering main effects. Sample sizes for choice based experiments usually require 150 to 1200 respondents, measurement errors for conjoint analysis are reduced by having more data from each respondent [43]. As there are 17 medical schools within our sampling frame we anticipate based on a minimum task number of t=15, minimum alternatives a=4, and largest number of levels per attribute c=5, we require a sample size of 42 respondents per medical school if t=15, with a total estimated minimum number of required respondents being 714. Adjusting for a 70% response rate **we anticipate needing to sample a minimum of 1000 people nationally**.

4.2 Data Analysis:

The collected data will be free of personal identifiers and will be stored in a password protected data base. The survey results will be analyzed using a computationally complex and intensive method called the Hierarchal Bayes estimation [43,56-58]. Hierarchal Bayes will be used to establish utility coefficients and importance scores for each attribute for each participant using Sawtooth software. Utility coefficients reflect the relative influence of each attribute on treatment preferences. Importance scores will show the relative influence of variations in the levels of each attribute on participant choices. We will compute latent class segmentation analyses which will examine physicians with various specific treatment preferences. Chi square and analysis of variance will be used to study demographic and attitudinal data.

5.0 Study Impact:

This ground-breaking application of choice based analysis has the ability to powerfully impact how we approach, design and deliver pediatric obesity treatments across Canada. Identified knowledge gaps during this study can be translated into effective and targeted educational tools and programs to meet the specific preferences and needs of physicians across Canada. This, to our knowledge, is the first application of these methods to look at the attitudes, behaviours, and knowledge acquisition preferences of physicians treating pediatric obesity. This study will lay the foundation for future studies to evaluate the needs of patients and parents which we believe is essential for improving engagement and adherence to obesity treatments. In a time when the costs of national health care are soaring and resources are limited, we must be innovative and develop strategies to facilitate and deliver valuable obesity treatments for children in Canada. Pediatric obesity is a growing epidemic in Canada. We must find ways to ensure children receive effective treatments for obesity nationally, as the long term consequences of obesity are both costly and devastating.

6.0 Details of the Study Team:

This study will be managed and coordinated by the McMaster Pediatric Surgery Research Collaborative (MPSRC). This research collaborative consists of 5 pediatric general surgeons and 2 pediatric urologists and the collective have extensive research experience ranging from basic science to international qualitative investigations. The Principal Investigator Dr. Karen Bailey is a well established Pediatric Surgeon with research experience and training in bariatric surgery. Dr. Bailey will work primarily with the MPSRC Research Coordinator Ms. Julia Pemberton and the study team. The Research Coordinator will contact all participants, collect, code and enter survey responses and administer all rewards for completed surveys. Dr. Katherine Morrison will be a Co-investigator. Dr. Morrison is a Pediatric Endocrinologist and an Associate Professor in the Department of Pediatrics. She is clinically active in the Pediatric Lipid clinic and Overweight at Risk Clinic at McMaster Children's Hospital. Her extensive expertise in obesity within the pediatric population will be an asset in developing survey content and national collaboration. Dr. Charles Cunningham, Dr. Bailey's Scientific Mentor, will oversee the study. He will be involved in the survey design and analysis. Dr. Cunningham is a Psychologist at McMaster Children's Hospital and a Professor in the Department of Psychiatry and Behavioural Neurosciences at McMaster University, where he holds the Jack Laidlaw Chair in Patient-Centred Health Care. Dr. Cunningham's research group will be responsible for the Sawtooth Software and will be providing expertise in data analysis. Dr. Cunningham's group has extensive experience using this methodology. Dr. Khalid Al-Harbi will assist with data analysis, interpretation and reporting of the study findings, he has been involved with the study design.

7.0 Multicenter Collaboration:

This study is a national study and we will collaborate with medical schools across Canada, the Canadian Association of Pediatric Surgeons, and the Canadian Obesity Network in order to survey practitioners who are providing pediatric care. Key contacts will be established at each tertiary academic centre across Canada, with the Canadian Association of Pediatric Surgeons and within the Canadian Obesity Network.

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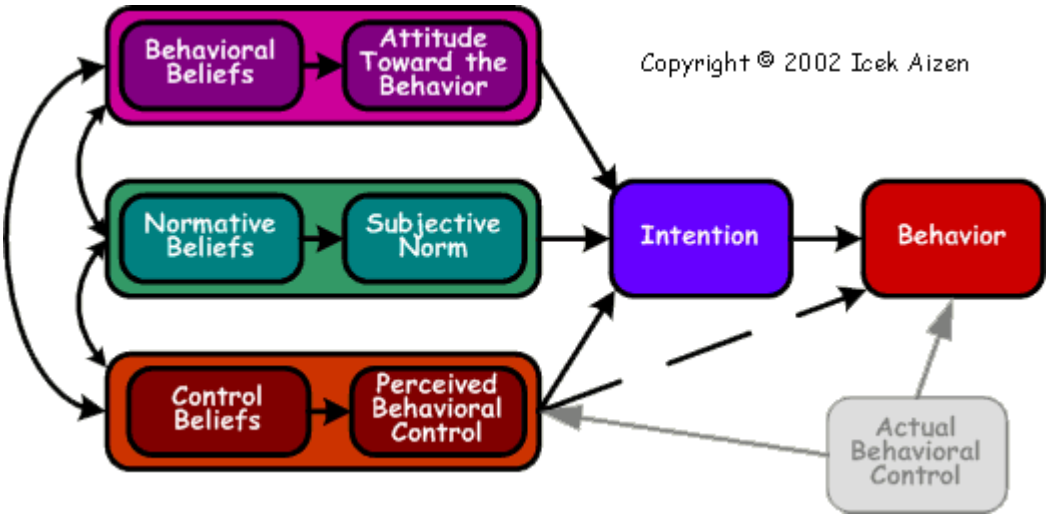
Appendix I. Theory of Planned Behaviour [34].

The theory of planned behaviour asserts that individual decisions about an intervention are influenced by expectations about an interventions effectiveness ("attitudes"), social pressures ("subjective norms") and personal beliefs about ones' own effectiveness ("perceived behaviour control"). Put into the context of this survey the more positively a clinicians expects and believes that pediatric obesity treatment will be effective, if societal normative beliefs support utilizing obesity treatment and the clinician is positively influenced by this, and the clinician believes they can effectively provide or refer a patient for obesity treatments, the higher the likelihood that the clinician will actually provide or refer a patient for treatment. Given real control to actually provide or refer pediatric patients for obesity treatment, clinicians are expected to facilitate treatment when the opportunity arises.



Appendix II – Conjoint Analysis Background Information

A series of choices are presented for a particular ”task” (aka scenario/product profile/intervention/program) and participants must decide which option they will choose based on the presented combinations of experimentally varied attribute combinations. Choice tasks prompt individuals to evaluate each factor and weigh the tradeoff’s associated with choosing one option over another. These choices may be influenced by individual beliefs about the task at hand, the pressure of social normative values or by beliefs about their own abilities as outlined in the theory of planned behaviour

Choice Task Question (Clinical):
What children’s obesity treatment program would you be most likely to refer patients to? (Choose one of the below options)

Program 1	Program2	Program 3
1 page referral form	2 page referral form	4 page referral form
50% cost covered by OHIP	100% cost covered by OHIP	NOT covered by OHIP
Supported by years of clinical experience	A promising but unproven treatment approach	Supported by randomized controlled trials

Conjoint Analysis Example Question (Marketing):

A real estate developer is interested in building a high rise apartment complex near an urban Ivy League university. To ensure the success of the project, a market research firm is hired to conduct focus groups with current students. Students are segmented by academic year (freshman, upper classmen, graduate studies) and amount of financial aid received.

Study participants are given a series index cards. Each card has 6 attributes to describe the potential building project (proximity to campus, cost, telecommunication packages, laundry options, floor plans, and security features offered). The estimated cost to construct the building described on each card is equivalent.

Participants are asked to order the cards from least to most appealing. This forced ranking exercise will indirectly reveal the participants' priorities and preferences. Multi-variate regression analysis may be used to determine the strength of preferences across target market segments.

Conjoint Analysis & Sawtooth Software (http://www.sawtoothsoftware.com)

Sawtooth Software's tools the most widely-used conjoint analysis systems in the world.

Hierarchical Bayes Estimation (http://www.sawtoothsoftware.com)

A typical challenge we face as researchers is to estimate a variety of weights (such as utility scores, coefficients, or attribute importance) using a limited amount of data. A relatively new statistical methodology called hierarchical Bayes (HB) improves these estimates, leading to greater stability and validity. HB is commonly used to improve conjoint analysis utilities (for all major conjoint techniques), and to permit individual-level estimation from sparse CBC (Choice-Based Conjoint) data. It may also be applied to MaxDiff scaling, or to general regression-based problems (where respondents have provided multiple cases or observations). Although the mathematics behind HB are very complex, our software makes it easy for researchers to obtain excellent results using robust default settings.

Item Scaling/ MaxDiff (http://www.sawtoothsoftware.com)

As researchers, we're constantly being asked to measure things, such as brand preference, the importance of product features, the benefits of a variety of job-related benefits, the impact of product packaging, etc. Sawtooth Software has developed a powerful system for scaling such items, called MaxDiff (Maximum Difference Scaling). MaxDiff is a simple software tool and technique to use (easier than conjoint analysis). It creates questionnaires in which respondents trade off the different items you are studying. The end result is a set of scores that prioritize your list of items on a 0 to 100 scale. The reason MaxDiff is becoming so popular is that the scores are more discriminating and have greater validity than traditional rating scales.

Adapted from the Sawtooth Software website, 2010

Appendix III-Letter of Support from CONS

Canadian Obesity Network
Réseau canadien en obesité
Royal Alexandra Hospital
MMC, Room 102
10240 Kingsway Avenue
Edmonton, AB T5H 3V9
Tel: (780) 735-5860
Fax: (780) 735-6763
www.obesitynetwork.ca

Sept 28, 2010

Dr. Jeff Ginsberg
NIF Chairperson-Scientific Review Board
Professor, Department of Medicine, McMaster University

Dear Dr. Ginsberg,

It is our sincere pleasure to provide this letter of support to accompany Dr. Karen Bailey's application to the Hamilton Health Sciences New Investigator Fund on behalf of the Canadian Obesity Network and our national research network titled TROPIC (Treatment and Research of Obesity in Pediatrics in Canada).

Dr. Bailey is a pediatric general surgeon and a new Assistant Professor at McMaster University in the Faculty of Health Sciences. She has completed additional clinical training in bariatric surgery and has demonstrated excellence in applied clinical research, which is highlighted by her peer reviewed publications. Her dedication to addressing the problem of pediatric obesity is demonstrated by her active involvement as a member of the Pediatric Committee, which addresses the issue of Pediatric Obesity within the American Society of Metabolic and Bariatric Surgery. We believe that Dr. Bailey's study, *Understanding Decision Making, Attitudes and Knowledge Acquisition Among Clinicians Treating Pediatric Obesity in Canada* is a very important national study. Her research study is completely consistent with the mandate of our research network, which is devoted to optimizing obesity-related health services for overweight and obese children, youth, and their families in Canada. Her innovative study will apply advanced survey methodology using the Theory of Planned Behavior and conjoint analysis to understand the beliefs and needs of physicians who are the gatekeepers of patient care and leaders in education at medical schools across Canada.

The information gained by this study will be instrumental in developing educational tools for physicians. This study will also help clinical leaders address the barriers that must be overcome to address the pediatric obesity epidemic in Canada. We wish Dr. Bailey great success with this research and look forward to collaborating with her on this timely study.

Sincerely,

Jean-Pierre Chanoine, MD, PhD
Co-Chair, TROPIC
Director (Pediatric Section)
Canadian Obesity Network

Clinical Professor & Head
Endocrinology & Diabetes Unit
BC Children's Hospital
Vancouver, BC

Geoff Ball, PhD, RD
Co-Chair, TROPIC

Assistant Professor, Department of Pediatrics, University of Alberta
Edmonton, AB

Arya Sharma, MD, PhD
Scientific Director,
Canadian Obesity Network

Professor, Department of Medicine, University of Alberta
Edmonton, AB

Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

PROTECTED WHEN COMPLETED

Personal Identification Number (P.I.N.)

137204

CV Module

This page is for CIHR use only. It will not be included in the evaluation of your application for funding.

Family Name	Given Name	Middle Initial(s)
Bailey	Karen	A

Have you previously applied to CIHR for funding? Yes ☐ No ☒

Previous family name used

Previous given name used

Title: Dr. ☒ Mr. ☐ Mrs. ☐ Ms. ☐ Prof. ☐

Courier Address
(If different from mailing address)

McMaster Children's Hospital
1200 Main Street West
Rm 4E4
Hamilton, Ontario
CANADA (L8N 3Z5)

Temporary Address

Start Date
End Date

Primary Affilliation Name

McMaster University Medical Centre

Start Date 01/2010

Primary Affiliation Address

McMaster Children's Hospital
1200 Main Street West
Rm 4E4
Hamilton, Ontario
CANADA (L8N 3Z5)

Contact numbers

Phone

Primary (905) 521-2100 #75231

Secondary

Temporary

Start Date End Date

Fax

Primary (905) 521-9992

Temporary

Start Date End Date

Electronic Addresses

E-Mail

kbailey@mcmaster.ca

Web page address

Citizenship

Canadian ☒ Other ☒

Other Country of Citizenship CANADA

Permanent Residence in Canada

Permanent Resident ☐ Date of permanent residency status DD/MM/YYYY

Have you applied for permanent residency? Yes ☐ No ☐

Correspondence Language

English ☒ French ☐

Language	Read	Write	Speak	Understand
English (Yes or No)	YES	YES	YES	YES
French (Yes or No)	NO	NO	NO	NO

Other Languages:

Gender

Male ☐ Female ☒

Date of Birth (DD/MM/YYYY)

19/09/1973

Expertise

List up to ten (10) key words that best describe your expertise in research, instruments and technique.

Pediatric	Quality Assurance
Clinical	Empyema
Laparoscopic	Gastroenterology
Quality Improvement	Fundoplication
Surgery	Obesity

Indicate and rank the disciplines that best correspond to your research interests. No additional pages may be added.

	Discipline		Sub Discipline	
Rank	**Code**	**Description**	**Code**	**Description**
1.	91	HEALTH SCIENCES, APPLIED AND HEALTH SERVICES DELIVERY	990	Prevention and Treatment Evaluation
2.	91	HEALTH SCIENCES, APPLIED AND HEALTH SERVICES DELIVERY	434	Health Services Evaluation
3.	13	CANCER/ONCOLOGY	1280	Cancer Therapy General
4.	91	HEALTH SCIENCES, APPLIED AND HEALTH SERVICES DELIVERY	1114	Public Health Administration/Public Health Education
5.	3	GASTRO-INTESTINAL SYSTEM	191	Surgery - Gastrointestinal
6.	3	GASTRO-INTESTINAL SYSTEM	787	Motility, Cellular
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

Academic Background - One additional page may be added

Indicate all university degrees obtained and those in progress (where applicable) starting with the most recent. If you hold a co-degree from more than one institution (e.g. under the Soutien aux cotutelles de these de doctorat agreement between Quebec and France) enter each institution separately. Do not enter honorary degrees here, they should be listed in the Distinctions section.

Also indicate research training, such as postdoctoral or fellowship training. Trainees only: also list undergraduate and graduate research training experience.

Degree Type	Degree Name and Specialty	Institution/Organization and Country	Supervisor name	Start date (MM/YYYY)	Date received or expected (MM/YYYY)
Fellow (Health Professional)	Pediatric Surgery Pediatric General Surgery	University of Toronto CANADA	Dr. Jacob Langer	07/2004	06/2006
Fellow (Health Professional)	Research and Clinical Fellow Pediatric Surgery Pediatric General Surgery	University of Ottawa CANADA	Dr. Steven Rubin	07/2003	06/2004
Postdoctorate	General Surgery Residency General Surgery	McMaster University CANADA	Dr. Mark Walton	07/1998	06/2003
Doctor (Medical)	MD	McMaster University CANADA	Dr. Ann Benger	09/1995	05/1998
Bachelor's	Bachelor of Science Biology	Roberts Wesleyan College UNITED STATES	Dr. David Roll	09/1992	05/1995

Work Experience

Starting with the most recent, indicate your current position, where applicable, and other academic and non-academic position(s) since the beginning of your university studies. For your current positions leave the end date blank. Additional pages will be accepted.

Position	Institution/Organization and Country	Department/Division and Faculty/School	Start Date (MM/YYYY)	End Date (MM/YYYY)
Assistant Professor	McMaster University Medical Centre CANADA	Department of Medicine / Faculty of Health Sciences Faculty of Health Sciences	01/2010	
Associate Pediatric Surgery	Geisinger Medical Center, Janet Weis Children's Hospital UNITED STATES	Department of Surgery, Division of Pediatric Surgery	01/2007	11/2009
Pediatric Surgery Fellow	University of Toronto CANADA	Surgery	07/2004	11/2006
Research and Clinical Fellow Pediatric Surgery	University of Ottawa CANADA	Surgery	07/2003	06/2004
General Surgery Resident	McMaster University CANADA	Surgery	07/1998	06/2003
Teaching Assistant and Residence Advisor	Roberts Wesleyan College UNITED STATES	Science	09/1992	05/1995

Distinctions / Awards / Credentials

Starting with the most recent, indicate any recognitions received, including awards, fellowships, scholarships, licenses, qualifications, professional designation or credentials. Do not include Academic Appointments here, as they are detailed under Work Experience. Maximum 20 entries.

Name/Title and Type	Institution/Organization and Country	Effective Date (MM/YYYY)	End Date (MM/YYYY)	Specialty	Total Amount
Certification in Pediatric General Surgery Credential	Royal College of Physicians and Surgeons of Canada CANADA	2006			
Certification in General Surgery Credential	Royal College of Physicians and Surgeons of Canada CANADA	2003			
General Surgery Resident Research Award Research award	McMaster University CANADA	2002			
Who's Who Among American Colleges and Universities Distinction	Roberts Wesleyan College UNITED STATES	1995			
Academic Schlorships and Leadership Grants Distinction	Roberts Wesleyan College UNITED STATES	1992	1995		
Elwyn E. Hier Memorial Scholarship Distinction	Roberts Wesleyan College UNITED STATES	1992			

Patents and Intellectual Property Rights

Record the total numbers of patents / copyrights in the following table.

OBTAINED			APPLICATIONS UNDER PROCESS			TOTAL PATENTS AND INTELLECTUAL PROPERTY RIGHTS
Total individual	Total collective	Sub-total	Total individual	Total collective	Sub-total	
0	0	0	0	0	0	0

PUBLICATIONS AND PRESENTATIONS

Give the number of publications and presentations in the course of your career. Detailed information should be attached as specified in the "Contributions - details" section.

Publications	Refereed Articles	Books and Monographs	Proceedings / Book Chapters / Contributions to a collective work	Abstracts / Notes	TOTALS
Already Published	4	0	1	3	8
Accepted or in the Press	0	0	0	0	0
					8

Invited presentations	9

LITERARY AND ARTISTIC WORKS

Provide the number of literary and artistic works created in the course of your career. Detailed information should be attached as specified in the "Contributions - details" section.

IN CIRCULATION			IN PROGRESS			TOTAL LITERARY AND ARTISTIC WORKS
Total individual	Total collective	Sub-total	Total individual	Total collective	Sub-total	
1	7	8	1	0	1	9

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Supervisory Experience: To be completed by applicants requesting research trainees as part of their budget, salary support candidates and proposed supervisors of trainees.

Indicate the number of graduate students and postdoctoral fellows that you currently supervise or co-supervise. CIHR defines supervisory experience as the formal supervision or co-supervision of trainees. Enter zero (0) if not applicable.

Master 0 Doctoral 0 Post-Doctoral 5

Complete this form by listing the trainees that you have supervised/co-supervised (and are currently supervising/co-supervising) within the last five (5) years. Additional pages may be added if necessary.
* Flag those where you were/are the Primary Supervisor.

*	Name of Student	Program Type	Dates		Degree received or expected	Year Degree Rec'd (YYYY)	Research Project (Short title)	Current position and Institution
			Support Period From (MM/YY	To (MM/YYYY)				

<~~ 82401-1346738547 ~~>

Funds REQUESTED

List all sources of support applied for (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount requested (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Funds CURRENTLY HELD

List all sources of support currently held (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Funds HELD IN THE LAST FIVE YEARS

List all sources of support held in the last five years (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Attachment Instructions

How to prepare and format all attachments:

Most Significant Contributions, Activities/Contributions, Interruptions/Delays, Patents/Copyrights (Part 2), and Publications (Part 2) details shall be contained in a CV attachment. Note: If you are using ResearchNet, you will need to provide each section identified as a separate PDF file.

The following format should be adhered to for this attachment.

- 8.5" X 11" (21.5 X 28.0 cm) white single-sided paper.
- Margins of ¾" (2 cm).
- Minimum font size 12 point or 10 characters per inch.
- Six lines per inch, single-spaced, with no condensed type or spacing.
- Number pages consecutively after CV (If, for example, the print-out of the CV ends on page 8, the attachment would begin with page 9.).
- Each page header must contain the name and the sub-section header, e. g., Most Significant Contributions.

Most Significant Contributions

This section applies only to researchers, not to students. Identify a **maximum of five (5) contributions, with a maximum length of one page**, that best highlight your contribution or activities to research, defining the impact and relevance of each. (A contribution is understood to be a publication, literary or artistic work, conference, patent or copyright, contract or creative activity, commission, etc.) Your complete description may include the organization; position or activity type and description; from and to dates; and the basis on which this contribution is significant (i.e. relevance, target community and impact).

Activities / Contributions

The activities and contributions defined in this section should include both academic and non-academic achievements, and their impacts. **Limit the list to one page.**

Interruption(s) / Delays

Identify any administrative responsibilities, family or health reasons, or any other factors that might have delayed or interrupted any of the following: academia, career, scientific research, other research, dissemination of results, training, etc. Common examples of an interruption/delay might be a bereavement period following the death of a loved one, maternity/parental leave, or relocation of your research environment. **Limit the list to one page.**

Descriptions might include the start and end dates, the impact areas, and the reason(s) or a brief explanation of the absence.

Patents and Intellectual Property Rights

This section should include detail for patents and intellectual property rights for technology transfer, products, and services. Do not include Publications in this section. **Limit the list to one page.**

Descriptions for patents/intellectual property rights might include the title, patent/intellectual property rights number and date, country(ies) of issue, as well as the relevance or impact of this item and any inventor name(s) which pertain to it.

Publications List

List your most important publications and other research contributions over the past five years, according to the categories below. This is not necessarily a complete list, and is only intended to provide guidance. Categories can be added as needed. Use only items pertinent to the application. **There is no limit to the number of pages you can use.**

For Training or Salary Support Awards Candidates

- Candidates for training awards or New Investigator awards should list all publications, not just those of the last five years.
- All candidates for training or salary support awards must, for each multi-authored publication, define their role in the publication and indicate their percent contribution to the team effort.
- Candidates for training awards, with or without publications, are invited to comment on environmental factors that affected their capacity to publish.
- Candidates for salary support awards should, for multi-authored publications, underline the names of trainees whose work they supervised.

For Proposed Supervisors of Training Award Applicants

- Attach a maximum of two pages listing the titles and contributions over the past 5 years that will serve the application best.

Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

PROTECTED WHEN COMPLETED

Personal Identification Number (P.I.N.)

18064

CV Module

This page is for CIHR use only. It will not be included in the evaluation of your application for funding.

Family Name	Given Name	Middle Initial(s)
Cunningham	Charles	E

Have you previously applied to CIHR for funding? Yes [X] No [ ]

Previous family name used

Previous given name used

Title: Dr. [X] Mr. [ ] Mrs. [ ] Ms. [ ] Prof. [ ]

Courier Address
(If different from mailing address)

565 Sanatorium Rd.
HHS, Chedoke Site, Evel Bldg., Rm. 163
McMaster Children's Hospital
Hamilton, Ontario
CANADA (L9C 7N4)

Temporary Address

Start Date
End Date

Primary Affilliation Name

McMaster University

Start Date 09/1977

Primary Affiliation Address

Psychiatry and Behavioural Neurosciences
Faculty of Health Sciences
McMaster University
1200 Main Street West
Hamilton, Ontario
CANADA (L8N 3Z5)

Contact numbers

Phone

Primary (905) 521-2100 #77307 Office

Secondary

Temporary

Start Date End Date

Fax

Primary (905) 521-7935 Office

Temporary

Start Date End Date

Electronic Addresses

E-Mail
cunnic@hhsc.ca

Web page address

Citizenship

Canadian [ ] Other [X]

Other Country of Citizenship UNITED STATES

Permanent Residence in Canada

Permanent Resident [X] Date of permanent residency status 12/09/1977 DD/MM/YYYY

Have you applied for permanent residency? Yes [ ] No [ ]

Correspondence Language

English [X] French [ ]

Gender

Male [X] Female [ ]

Date of Birth (DD/MM/YYYY)

01/05/1947

Language	Read	Write	Speak	Understand
English (Yes or No)	YES	YES	YES	YES
French (Yes or No)	NO	NO	NO	NO

Other Languages:

Expertise

List up to ten (10) key words that best describe your expertise in research, instruments and technique.

Children's Mental Health	
Clinical Trials	
Service Utilization	
Parent Training	

Indicate and rank the disciplines that best correspond to your research interests. No additional pages may be added.

	Discipline		Sub Discipline	
Rank	**Code**	**Description**	**Code**	**Description**
1.	92	MENTAL HEALTH	883	Child Psychiatry
2.	91	HEALTH SCIENCES, APPLIED AND HEALTH SERVICES DELIVERY	987	Mental Health Service Delivery
3.	23	BEHAVIORAL SCIENCES	1027	Clinical Psychology
4.	23	BEHAVIORAL SCIENCES	1444	Attention Deficit Hyperactivity Disorder (ADHD)
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

Academic Background - One additional page may be added

Indicate all university degrees obtained and those in progress (where applicable) starting with the most recent. If you hold a co-degree from more than one institution (e.g. under the Soutien aux cotutelles de these de doctorat agreement between Quebec and France) enter each institution separately. Do not enter honorary degrees here, they should be listed in the Distinctions section.

Also indicate research training, such as postdoctoral or fellowship training. Trainees only: also list undergraduate and graduate research training experience.

Degree Type	Degree Name and Specialty	Institution/Organization and Country	Supervisor name	Start date (MM/YYYY)	Date received or expected (MM/YYYY)
Doctorate (PhD)	Doctor of Philosophy Experimental Psychology	American University UNITED STATES	Stanley J. Weiss, Ph.D.	09/1972	1976
Master's	Master of Arts Psychology	San Diego State University UNITED STATES	R. H. DeFran, Ph.D.	09/1970	1974
Bachelor's	Bachelor of Arts Psychology	California State University - Fresno UNITED STATES	Mitri Shanab, Ph.D	01/1968	1970

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Work Experience

Starting with the most recent, indicate your current position, where applicable, and other academic and non-academic position(s) since the beginning of your university studies. For your current positions leave the end date blank. Additional pages will be accepted.

Position	Institution/Organization and Country	Department/Division and Faculty/School	Start Date (MM/YYYY)	End Date (MM/YYYY)
Full Professor	McMaster University CANADA	Psychiatry and Behavioural Neurosciences Health Sciences	09/1977	
Psychologist	Hamilton Health Sciences CANADA		09/1977	
Post Doctoral Resident in Medical Psychology	University of Oregon Health Sciences Center UNITED STATES		09/1976	08/1977
Medical Psychology Intern	University of Oregon Health Sciences Center UNITED STATES		09/1975	08/1976
MCH Predoctoral Trainee	John F. Kennedy Institute, Johns Hopkins University Medical School UNITED STATES		09/1974	06/1975

Distinctions / Awards / Credentials

Starting with the most recent, indicate any recognitions received, including awards, fellowships, scholarships, licenses, qualifications, professional designation or credentials. Do not include Academic Appointments here, as they are detailed under Work Experience. Maximum 20 entries.

Name/Title and Type	Institution/Organization and Country	Effective Date (MM/YYYY)	End Date (MM/YYYY)	Specialty	Total Amount
Cornerstone Award Distinction	Hamilton Health Sciences CANADA	04/2008	04/2009		
Jack Laidlaw Chair In Patient Centered Health Care Distinction	Faculty of Health Sciences McMaster University UNITED STATES	01/2002	07/2012		
Senior Research Fellowship Research award	The Ontario Mental Health Foundation CANADA	07/1997	08/1999		
Senior Research Fellowship Research award	The Ontario Mental Health Foundation CANADA	07/1995	06/1997		
Senior Research Fellowship Research award	The Ontario Mental Health Foundation CANADA	07/1993	06/1995		
Registered Psychologist Credential	College of Psychologists of Ontario CANADA	1978	2005	Clinical Child Psychology	

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Patents and Intellectual Property Rights

Record the total numbers of patents / copyrights in the following table.

OBTAINED			APPLICATIONS UNDER PROCESS			TOTAL PATENTS AND INTELLECTUAL PROPERTY RIGHTS
Total individual	Total collective	Sub-total	Total individual	Total collective	Sub-total	
0	0	0	0	0	0	0

PUBLICATIONS AND PRESENTATIONS

Give the number of publications and presentations in the course of your career. Detailed information should be attached as specified in the "Contributions - details" section.

Publications	Refereed Articles	Books and Monographs	Proceedings / Book Chapters / Contributions to a collective work	Abstracts / Notes	TOTALS
Already Published	97	8	18	29	152
Accepted or in the Press	3	0	0	0	3
					155

Invited presentations	163

LITERARY AND ARTISTIC WORKS

Provide the number of literary and artistic works created in the course of your career. Detailed information should be attached as specified in the "Contributions - details" section.

IN CIRCULATION			IN PROGRESS			TOTAL LITERARY AND ARTISTIC WORKS
Total individual	Total collective	Sub-total	Total individual	Total collective	Sub-total	
0	0	0	0	0	0	0

Supervisory Experience: To be completed by applicants requesting research trainees as part of their budget, salary support candidates and proposed supervisors of trainees.

Indicate the number of graduate students and postdoctoral fellows that you currently supervise or co-supervise. CIHR defines supervisory experience as the formal supervision or co-supervision of trainees. Enter zero (0) if not applicable.

Master 4 Doctoral 0 Post-Doctoral 0

Complete this form by listing the trainees that you have supervised/co-supervised (and are currently supervising/co-supervising) within the last five (5) years. Additional pages may be added if necessary.
* Flag those where you were/are the Primary Supervisor.

*	Name of Student	Program Type	Dates		Degree received or expected	Year Degree Rec'd (YYYY)	Research Project (Short title)	Current position and Institution
			Support Period From (MM/YY	To (MM/YYYY)				
*	Diana Urajnik	Postdoctoral Fellow, PhD	01/2010	01/2011	Doctorate (PhD)	2010	Association Between Children's Mental Health Symptoms and Attrition from Treatment	Postdoctoral Fellow, McMaster University
*	Sophia Fanourgiakis	Graduate Student	09/2008	01/2009	Master's		Linguistic analysis of child-parent dyads in children with selective mutism	Graduate Student, McMaster University
*	Fran Arnold	Graduate Student	01/2008	01/2009	Doctorate (PhD)		Modelling Service Preferences of Parents of Children with ADHD	Graduate Student, Univ. of Buffalo
*	Matilda Nowakowski	Graduate Student	09/2006	01/2009	Doctorate (PhD)		Language and academic performance in children with selective mutism	Graduate Student, McMaster University
*	Shannon Edison	Graduate Student	09/2004	02/2008	Doctorate (PhD)	2008	Parenting Children with Selective Mutism; Parenting Behaviours and Individual, Child, and Contextual Factors	Psychologist , McMaster Child.Hosp.

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Funds REQUESTED

List all sources of support applied for (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount requested (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period** **From (MM/YYYY)**	**To (MM/YYYY)**

Funds CURRENTLY HELD

List all sources of support currently held (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal A cost-effective, family-based, prevention and treatment program of early childhood behaviour programs. A Finland-Canada collaboration.		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name** Team Grant: Early origins of addiction in children and youth	
Principal Applicant / Project Leader McGrath, Pat	**Your Role** Co-Applicant	
Total Amount (CAN$) $1,296,477	**Support Period From (MM/YYYY)** 01/2010	**To (MM/YYYY)** 12/2013

Title of Proposal Emerging Team in Knowledge Translation for Child and Youth Mental Health		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name**	
Principal Applicant / Project Leader Barwick, Melanie	**Your Role** Co-Applicant	
Total Amount (CAN$) $1,500,000	**Support Period From (MM/YYYY)** 02/2008	**To (MM/YYYY)** 02/2013

Title of Proposal Pathways to Mental Health Treatment: Mobilizing Knowledge to Inform Consumer Decision-Making, Advocacy, and Access		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name**	
Principal Applicant / Project Leader Walker, John	**Your Role** Co-Applicant	
Total Amount (CAN$) $1,500,000	**Support Period From (MM/YYYY)** 02/2008	**To (MM/YYYY)** 02/2013

Title of Proposal Outcome Trajectories in Children with Epilepsy: What Factors are Important?		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name**	
Principal Applicant / Project Leader Ronen, Gabriel M.	**Your Role** Co-Applicant	
Total Amount (CAN$) $1,302,095	**Support Period From (MM/YYYY)** 01/2008	**To (MM/YYYY)** 01/2013

Funds CURRENTLY HELD

List all sources of support currently held (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal Delivering Treatment for Oppositional Defiant Disorder at a Distance: A Randomized Trial		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name** Randomized Controlled Trials	
Principal Applicant / Project Leader McGrath, Patrick J.	**Your Role** Co-Applicant	
Total Amount (CAN$) $1,445,704	**Support Period From (MM/YYYY)** 10/2008	**To (MM/YYYY)** 09/2012

Title of Proposal A Novel Multimodal Intervention for Children with ADHD and Impaired Mood		
Funding Source National Institutes of Mental Health (NIMH)	**Program Name**	
Principal Applicant / Project Leader Waxmonsky, James G.	**Your Role** Co-Applicant	
Total Amount (CAN$) $405,000	**Support Period From (MM/YYYY)** 04/2008	**To (MM/YYYY)** 03/2011

Title of Proposal CIHR Team to Improve Access to Children's Mental Health Services		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name**	
Principal Applicant / Project Leader McGrath, Pat	**Your Role** Co-Applicant	
Total Amount (CAN$) $4,308,210	**Support Period From (MM/YYYY)** 04/2006	**To (MM/YYYY)** 03/2011

Title of Proposal AUTO21		
Funding Source Networks of Centres of Excellence (NCE)	**Program Name** Booster Seat Study	
Principal Applicant / Project Leader Bruce, Beth	**Your Role** Co-Applicant	
Total Amount (CAN$) $438,000	**Support Period From (MM/YYYY)** 04/2008	**To (MM/YYYY)** 04/2010

Funds HELD IN THE LAST FIVE YEARS

List all sources of support held in the last five years (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal Children's Mental Health Information at Work		
Funding Source Provincial Centre of Excellence for Child and Youth Mental Health at CHEO (	**Program Name**	
Principal Applicant / Project Leader Buchanan, Don H.	**Your Role** Co-Applicant	
Total Amount (CAN$) $31,088	**Support Period From (MM/YYYY)** 10/2008	**To (MM/YYYY)** 03/2010

Title of Proposal Behavioral parent training for fathers of children with ADHD		
Funding Source National Institutes of Mental Health (NIMH)	**Program Name**	
Principal Applicant / Project Leader Fabiano, Gregory A.	**Your Role** Co-Applicant	
Total Amount (CAN$) $405,000	**Support Period From (MM/YYYY)** 04/2007	**To (MM/YYYY)** 03/2010

Title of Proposal Toward a Bully-Free Community		
Funding Source National Institutes of Mental Health (NIMH)	**Program Name** Community University Research Alliance (CURA)	
Principal Applicant / Project Leader Vaillancourt, Tracy	**Your Role** Co-Applicant	
Total Amount (CAN$) $1,000,000	**Support Period From (MM/YYYY)** 02/2005	**To (MM/YYYY)** 02/2010

Title of Proposal The early social anxiety project: Parenting, social, diagnostic, and psychophysiological predictors of two-year developmental trajectories of children with selective mutism and social phobias		
Funding Source Ontario Mental Health Foundation	**Program Name**	
Principal Applicant / Project Leader Cunningham, Charles E.	**Your Role** Principal Applicant	
Total Amount (CAN$) $149,660	**Support Period From (MM/YYYY)** 04/2007	**To (MM/YYYY)** 03/2009

Funds HELD IN THE LAST FIVE YEARS

List all sources of support held in the last five years (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal		
Choosing Healthy Actions and thoughts (CHAT): A randomzed trial of the influence of a school-based universal mental health promotion program on depressive symptomatology...		
Funding Source		**Program Name**
Provincial Centre of Excellence for Child and Youth Mental Health at CHEO (		
Principal Applicant / Project Leader		**Your Role**
Short, Kathy		Principal Applicant
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**
$149,991	04/2006	03/2008

Title of Proposal		
A multi-site, longitudinal comparison of behavioural, social, academic, physiological, and service preference correlates of selective mutism, social phobia, and clinic controls		
Funding Source		**Program Name**
Ontario Mental Health Foundation		
Principal Applicant / Project Leader		**Your Role**
C. E. Cunningham		Principal Applicant
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**
$149,890	06/2004	12/2006

Title of Proposal		
Family Help: Research driven, primary mental health care for children and adolescents		
Funding Source		**Program Name**
Canadian Institutes of Health Research (CIHR)		Strategic Research Grant
Principal Applicant / Project Leader		**Your Role**
McGrath, Pat		Co-Applicant
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**
$1,900,000	03/2001	03/2006

Title of Proposal		
Renewal: Screening for Psychopathology in Child Mental: Evaluation of Brief Child and Family Phone Interview		
Funding Source		**Program Name**
Canadian Institutes of Health Research (CIHR)		
Principal Applicant / Project Leader		**Your Role**
Boyle, Michael		Co-Applicant
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**
$82,039	02/2005	01/2006

Funds HELD IN THE LAST FIVE YEARS

List all sources of support held in the last five years (including CIHR) as an applicant or as a co-applicant. Include the principal applicant's name, title of the proposal, funding source, program name, total amount awarded (in Canadian dollars) and the period of the support. Indicate your role in the funding (principal applicant/project leader or co-applicant).

Title of Proposal Team Grant: Overcoming the tragedy of children's mental health problems		
Funding Source Canadian Institutes of Health Research (CIHR)	**Program Name** letter of intent	
Principal Applicant / Project Leader McGrath, Patrick	**Your Role** Co-Applicant	
Total Amount (CAN$) $10,000	**Support Period From (MM/YYYY)** 03/2005	**To (MM/YYYY)** 12/2005

Title of Proposal Choosing Healthy Actions and Thoughts: The Effectiveness of A School-Based Universal Depression Prevention Program		
Funding Source Provincial Centre of Excellence for Child and Youth Mental Health at CHEO (	**Program Name**	
Principal Applicant / Project Leader Short, Kathy	**Your Role** Co-Applicant	
Total Amount (CAN$) $9,600	**Support Period From (MM/YYYY)** 01/2005	**To (MM/YYYY)** 12/2005

Title of Proposal Help I Need Somebody: The Experiences of families seeking treatment for children with psychosocial problems and the impact of delayed or deferred treatment		
Funding Source Canadian Health Services Research Foundation (CHSRF)	**Program Name**	
Principal Applicant / Project Leader Reid, Graham	**Your Role** Co-Applicant	
Total Amount (CAN$) $200,000	**Support Period From (MM/YYYY)** 04/2003	**To (MM/YYYY)** 04/2005

Title of Proposal		
Funding Source	**Program Name**	
Principal Applicant / Project Leader	**Your Role**	
Total Amount (CAN$)	**Support Period From (MM/YYYY)**	**To (MM/YYYY)**

Attachment Instructions

How to prepare and format all attachments:

Most Significant Contributions, Activities/Contributions, Interruptions/Delays, Patents/Copyrights (Part 2), and Publications (Part 2) details shall be contained in a CV attachment. Note: If you are using ResearchNet, you will need to provide each section identified as a separate PDF file.

The following format should be adhered to for this attachment.

- 8.5" X 11" (21.5 X 28.0 cm) white single-sided paper.
- Margins of ¾" (2 cm).
- Minimum font size 12 point or 10 characters per inch.
- Six lines per inch, single-spaced, with no condensed type or spacing.
- Number pages consecutively after CV (If, for example, the print-out of the CV ends on page 8, the attachment would begin with page 9.).
- Each page header must contain the name and the sub-section header, e. g., Most Significant Contributions.

Most Significant Contributions

This section applies only to researchers, not to students. Identify a **maximum of five (5) contributions, with a maximum length of one page**, that best highlight your contribution or activities to research, defining the impact and relevance of each. (A contribution is understood to be a publication, literary or artistic work, conference, patent or copyright, contract or creative activity, commission, etc.) Your complete description may include the organization; position or activity type and description; from and to dates; and the basis on which this contribution is significant (i.e. relevance, target community and impact).

Activities / Contributions

The activities and contributions defined in this section should include both academic and non-academic achievements, and their impacts. **Limit the list to one page.**

Interruption(s) / Delays

Identify any administrative responsibilities, family or health reasons, or any other factors that might have delayed or interrupted any of the following: academia, career, scientific research, other research, dissemination of results, training, etc. Common examples of an interruption/delay might be a bereavement period following the death of a loved one, maternity/parental leave, or relocation of your research environment. **Limit the list to one page.**

Descriptions might include the start and end dates, the impact areas, and the reason(s) or a brief explanation of the absence.

Patents and Intellectual Property Rights

This section should include detail for patents and intellectual property rights for technology transfer, products, and services. Do not include Publications in this section. **Limit the list to one page.**

Descriptions for patents/intellectual property rights might include the title, patent/intellectual property rights number and date, country(ies) of issue, as well as the relevance or impact of this item and any inventor name(s) which pertain to it.

Publications List

List your most important publications and other research contributions over the past five years, according to the categories below. This is not necessarily a complete list, and is only intended to provide guidance. Categories can be added as needed. Use only items pertinent to the application. **There is no limit to the number of pages you can use.**

For Training or Salary Support Awards Candidates

- Candidates for training awards or New Investigator awards should list all publications, not just those of the last five years.
- All candidates for training or salary support awards must, for each multi-authored publication, define their role in the publication and indicate their percent contribution to the team effort.
- Candidates for training awards, with or without publications, are invited to comment on environmental factors that affected their capacity to publish.
- Candidates for salary support awards should, for multi-authored publications, underline the names of trainees whose work they supervised.

For Proposed Supervisors of Training Award Applicants

- Attach a maximum of two pages listing the titles and contributions over the past 5 years that will serve the application best.

Grant Application: McMaster Surgical Associates

1.0 THE NEED FOR THE STUDY:

Family physicians, pediatricians and pediatric surgeons at academic centres are some of the key stakeholders in the education of healthcare providers who care for children and provide care to some of the most seriously ill children in Canada. What are these physicians attitudes and knowledge of childhood obesity (health consequences, treatment options, patient demographics), what referral patterns do they demonstrate and what are their preferences for knowledge acquisition? We propose that understanding the answer to these questions is an essential step in improving childhood obesity treatment and breaking down the barriers to children receiving effective obesity treatments in Canada.

This choice based conjoint survey will study a sample of physicians who provide care for children ages 2-18 to understand their attitudes, preferences for knowledge acquisition, knowledge of obesity and treatment options, patient demographics, and treatment referral patterns of morbidly obese children and adolescents in Canada. It is essential to understand this information in order to develop innovative strategies to break down the barriers to children receiving effective interventions for obesity in Canada.

1.1 What is the problem to be addressed?

1.1.1 The Epidemic of Childhood Obesity

Obesity has reached epidemic proportions in Canada, and is a problem that globally affects children, adolescents and adults. According to the 2006 Canadian clinical practice guidelines on the management and prevention of obesity in children and adults, obesity has become "the most prevalent nutritional problem in the world, eclipsing under nutrition and infectious disease as the most significant contributor to ill health and mortality." The report states that obesity is the key risk factor for many chronic and non-communicable diseases [1]. This rapid rise in obesity among children and adults has been declared a worldwide epidemic.

The prevalence of obesity (Body Mass Index (BMI) >95% for age and gender) in children has increased dramatically. The Canadian Community Health Survey estimates 1 in 4 (26%) children and adolescents age 2-17 are overweight, with the national obesity rate rising from 2% to 10% in boys and 2% to 9% in Canadian girls. In Canada 55% of First Nations children on reserves and 41% living off of reserves are overweight or obese [1, 7]. In America obesity prevalence over three years doubled for children age 6-11 and tripled for adolescents between the ages of 12-19 as of 2006 [2-4]. In 2006 an estimated one million adolescents between the ages of 13 and 21 had a BMI greater than 35 kg/m^2 [5]. More recently the Teen-LABS study, the first multicentre longitudinal assessment of bariatric surgery in children, estimated two million children and teens in the United States have a BMI $\geq$ 40 kg/m^2 [6].

Childhood obesity is associated with co-morbidities traditionally seen in obese adults. An American study concluded that more than 60 percent of overweight children 5 to 10 years of age had at least one risk factor for cardiovascular disease. They suffered from high blood pressure, high serum insulin levels or dyslipidemia, and 25 percent had two or more of these risk factors [8]. A study of diabetic children and adolescents in North America in 2000 determined that obesity is now associated with 45% of all newly diagnosed diabetes in pediatric patients [9]. Haynes in 2005 documented a link between joint problems, obstructive sleep apnea, psychosocial problems, metabolic syndrome, polycystic ovarian syndrome and premature mortality to childhood obesity [10].

Wand and Dietz used the National Hospital Discharge Survey (1979–1999), to examine the trends of obesity-associated diseases in youths aged 6-17 and the related economic costs. The results of the study indicated that from 1979–1981 to 1997–1999, the percentage of discharges with obesity-associated diseases has increased in the United States. The discharges of children with diabetes nearly doubled (from 1.43% to 2.36%), obesity and gallbladder diseases tripled (0.36% to 1.07% and 0.18% to

0.59%, respectively), and sleep apnea increased fivefold (0.14% to 0.75%). Ninety-six percent of discharges listed obesity as a secondary contributing diagnosis in 1997-1999 out of 42,597 discharges. Obesity-associated annual hospital costs increased more than threefold; from $35 million (0.43% of total hospital costs) during 1979–1981 to $127 million (1.70% of total hospital costs) during 1997–1999 [11].

1.1.2 Understanding Clinician's Knowledge and Referral Practice of Childhood Obesity Treatment Options: Preliminary Research Results

A survey in 2005-2006 sampled Canadian community pediatricians and family physicians, it identified some of the key barriers in treating childhood obesity: too few funded dieticians and weight management programs, lack of efficacy from their efforts, time constraints and limited training [59]. This survey was conducted prior to the publication of the Canadian Clinical Practice Guideline for the Prevention and Management of Obesity in Adults and Children, and bariatric surgery was not discussed in this survey. **We need to better understand the barriers to the treatment of childhood obesity, including bariatric surgery, to determine if the training needs have changed since the guideline was published and to identify which tools and training are needed to address referral or treatment barriers.**

The short term effectiveness of bariatric surgery for adolescents has been published in the literature since 2004. Although the rates of bariatric surgery are rising globally in this population the utilization of bariatric surgery for adolescents remains low in Canada. Iqbal from the Mayo clinic in Rochester surveyed pediatricians and family practitioners at a single institution to assess their perspectives on pediatric obesity. This survey resulted in several interesting conclusions; **1) *Physicians caring for children are cognizant and concerned about the growing obesity epidemic (82% agreed obesity was a major problem for patients),* and 2) despite the poor long-term outcomes with non-operative methods (only 1.8% reported satisfactory results) and the high satisfaction with bariatric surgery outcomes (of the physicians who did refer a patient for surgery 84.6% reported satisfactory results), physicians are still reluctant to refer children and adolescents for surgical weight loss procedures, with 88.5% of those surveyed indicating they unlikely or would never refer a patient for surgery [30].** These results in combination with the Canadian survey of community pediatricians and family physicians, clearly indicates that there are barriers to children receiving obesity treatment. It is apparent that further, high quality, research is needed in this area so that treatment barriers can be overcome.

This proposed study uses a rigorous discrete conjoint based survey design to obtain the necessary national perspective of health professionals attitudes related to both medical obesity treatments and bariatric surgery across Canada in the pediatric population. Current evidence indicates that there can be good outcomes with surgery and benefit from combined behavioural lifestyle interventions in adolescents. We need to understand the perspective of health professionals and the barriers to adolescents receiving these promising treatments here in Canada.

1.2 What is the principal research question to be addressed?

The primary research questions to be addressed is, "What are the physician attitudes and knowledge of childhood obesity (health consequences, treatment options, patient demographics), what referral patterns do they demonstrate and what are their preferences for knowledge acquisition?

1.3 Giver reference to any relevant systematic reviews and discuss the need for your study

Current treatment for obesity in children includes both medical and surgical modalities. There are several systematic reviews exploring adult bariatric surgery; however this is a relatively new intervention in children. A recent systematic review and meta-analysis examining the published evidence pertaining to bariatric surgery in children found 8 studies related to laparoscopic adjustable gastric banding (N=352), 6 studies on Roux-en-Y gastric bypass (N=131), and 5 studies of other surgical

procedures (N=158). The systematic review concluded that bariatric surgery in the pediatric patient does result in sustained and clinically significant weight loss [12]. In terms of the medical treatment options, a Cochrane review of interventions for preventing obesity in children in 2009 showed that "some studies that focused on dietary or physical activity approaches showed a small but positive impact on BMI" [15], While another Cochrane review which specifically looked at interventions for treating obesity in children found that "combined behavioural lifestyle interventions compared to standard care or self-help can produce a significant and meaningful reduction in overweight in children and adolescents. Furthermore, high quality research that considers psychosocial determinants for behavior change, strategies to improve clinician-family interaction, and cost-effective programs for primary and community care is required"[16]. Given the level of evidence supporting both medical and surgical treatment options for treating childhood obesity, it then becomes imperative to understand how clinicians are utilizing and referring their patients to these different treatment modalities.

1.4 How will the results of this study be used?

This ground-breaking application of choice based analysis has the ability to powerfully impact how we approach, design and deliver pediatric obesity treatments across Canada. Identified knowledge gaps during this study can be translated into effective and targeted educational tools and programs to meet the specific preferences and needs of physicians across Canada. This, to our knowledge, is the first application of these methods to look at the attitudes, behaviours, and knowledge acquisition preferences of physicians treating pediatric obesity. This study will lay the foundation for future studies to evaluate the needs of patients and parents which we believe is essential for improving engagement and adherence to obesity treatments. In a time when the costs of national health care are soaring and resources are limited, we must be innovative and develop strategies to facilitate and deliver valuable obesity treatments for children in Canada. Pediatric obesity is a growing epidemic in Canada. We must find ways to ensure children receive effective treatments for obesity nationally, as the long term consequences of obesity are both costly and devastating.

2.0 DESCRIPTION OF THE PROJECT:

Background: Theory of Planned Behaviour and Conjoint Analysis

Our survey is a discrete conjoint choice based experiment which will allow us to study Canadian physicians who are providing treatment for obese children age 2-18 in academic centres across Canada. The goal of the study is to gain an understanding of their treatment decisions, attitudes and preferences for knowledge acquisition. This discrete conjoint based experiment is based upon the Theory of Planned Behavior (TPB) from the field of psychology. This theory was first proposed by Icek Ajzen in 1985 [31], and is an extension of the Theory of Reasoned Action. TPB is a theory about the links between attitudes and behaviours. Within the context of this study TPB implies that a clinicians treatment decisions for obese children is influenced by expectations about the treatment effectiveness ("Attitudes"), social pressures ("Subjective Norms"), and beliefs about their own abilities ("Perceived Behavioral Control")[32].

The TPB has been proven to be effective in understanding health behaviour [33-35]. Specifically the TPB model has been used in HIV risk behavior research [36], exercise and physiology research [37,38] including two meta-analyses focused on self-determination and health behavior [39], and physical activity [40]. Recently TPB has been applied to understanding clinician's decision making in mental health [41]. Building on the success of this model in mental health clinical decision making, this study uses TPB to help understand the results of our conjoint choice based experimental survey by placing the respondents answers in a successful and applicable theoretical framework for interpretation.

Choice based conjoint (CBC) experiments were first designed in the field of marketing more than 35 years ago and have since been applied successfully to healthcare. Choice-based conjoint methods conceptualize a service (in this study obesity treatment) as a series of multi-level attributes

[43]. A pediatric obesity treatment program's attributes may include: ease of making a referral, patient accessibility, costs, patient/parental time demands, treatment benefit, and supporting evidence.

Participants in CBC studies are presented with questions and they must choose between options made up of various attribute combinations [43]. Choice tasks prompt participants to evaluate each attribute in the context of others and to weigh the tradeoffs associated with choosing one option over another. Through the questions asked we will be able to compute internal consistency, the data collected will also be subjected to complex high level Bayesian statistical analyses with highly sophisticated Sawtooth software. Complex choices by design are meant to limit superficial decisions, reveal opinions that influence real world decisions [44], and reduce biases that are based on social desirability [45,46]. As a result these methods have been shown to provide better estimates of a participants' actual behaviour and are far superior to other basic survey designs [47].

Conjoint methods use "decompositional approaches" to simulate preferences for existing programs, predict responses to attributes of new programs, predict the extent that preferred attributes will compensate for critical features with low utility, and estimate the relative influence of attributes on complex decisions [43]. Conjoint methods were developed by mathematical psychologists [48]. These methods are now widely used by health economists [49], transportation economists [50], and marketing researchers [51]. These methods have studied the information preferences of parents of children with mental health problems [52] and used to design prevention programs for parents [53]. In Canada "there is a need for knowledge translation research in obesity and the need for greater collaboration among all sectors of society to effect change in this field" [42]. This proposed study will use the TPB and Choice Based Conjoint methods to help us understand Canadian clinicians and develop new tools and programs to address pediatric obesity in Canada. When physician attitudes and beliefs are understood about effective obesity treatments, novel strategies can be developed to address the barriers which stand in the way of children receiving these effective obesity treatments across Canada.

2.1 What is the proposed study design and how will this be evaluated:

This study is broken down into four stages. Each stage will build upon the previous to collectively complete the CBC analysis.

Stage 1: Survey Development - Discrete conjoint choice based survey is developed for the study using the Theory of Planned Behaviour and choice tasks are created using the sophisticated Sawtooth software. The attributes to be studied in the choice tasks are determined by key informative interviews of physicians who actively refer or provide pediatric obesity treatment in Canada. The survey will include demographic data, 15-20 choice tasks and 15-20 attitudinal Likert scale questions. Constructs used will examine participants' behavioural beliefs, normative beliefs and control beliefs in relationship to obesity treatment in children. This stage is anticipated to take 4 months to complete and will involve interviewing physicians (both medical and surgical) at academic centers across Ontario. The result from Stage 1 will be to have the attribute list and choice tasks which make up the CBC survey.

Stage 2: Data Collection - Key contacts are established at each medical school across Canada and are engaged throughout the study by conference calls and emails. In the following stepwise manner the survey will be distributed and data collected in a password protected database free of personal identifiers: i) locally, ii) provincially then iii) nationally, to pediatricians, family physicians and pediatric surgeons associated with academic tertiary care centres across Canada. The survey will be administered using the Dillman method as it has repeatedly demonstrated a high survey response rate greater than 70% [54]. This stage of the study is anticipated to take 4 months.

Stage 3: Data analysis - Data and feedback on the survey will first be examined locally to ensure that the survey and analyses are functioning properly. The data will then be collected and examined sequentially and collectively on a regional, provincial and national level as outlined in Stage 3. Conjoint Analysis will be performed using complex computational analyses with Sawtooth software to calculate

internal consistency and Hierarchal Bayes estimations with utility coefficients and importance scores**.** The results will be compiled, published and presented at national meeting. This stage of the project will take 4 months.

Stage 4: Future work - Projected future studies and grants would focus on translating the results of this study about physician preferences and knowledge gaps into targeted educational tools and obesity treatment programs which appeal to physician preferences. Preferences can be used to design pediatric obesity treatment programs and simulate their likelihood to be utilized by physicians. Anticipated future studies and grant applications would examine the attitudes and preferences of patients/parents to ensure pediatric obesity treatment programs engage patients and improve adherence.

2.1.1 Sampling:

We have defined our study population as pediatricians, pediatric general surgeons, and family physicians associated at academic teaching hospitals across Canada. Our intent is that this sample will be representative of clinicians who are involved in the teaching and shaping of new clinical practices in pediatric care across Canada. A key study contact will be established at each medical school across Canada. These key study contacts will be engaged through study conference calls and emails. The conference calls and electronic communication will be used to discuss the study prior to implementation, to facilitate dissemination, and to follow up on survey completion. The survey will employ the Dillman method for administering the survey as it has repeatedly demonstrated a high survey response rate [54,55]. Sampling will be stratified across these centers and by members of the Canadian Obesity Network as members may display markedly different attitudes and behaviours.

2.2 What is the proposed sample size?

***There are no set sample size power calculations for conjoint analysis studies, however there is an accepted rule for this method which is*:** (n x t x a / c greater than or equal to 500), n= number of respondents, t= number of tasks (questions), a= number of alternatives per task excluding the none option, c= largest number of levels in any one attribute when considering main effects. Sample sizes for choice based experiments usually require 150 to 1200 respondents, measurement errors for conjoint analysis are reduced by having more data from each respondent [43]. As there are 17 medical schools within our sampling frame we anticipate based on a minimum task number of t=15, minimum alternatives a=4, and largest number of levels per attribute c=5, we require a sample size of 42 respondents per medical school if t=15, with a total estimated minimum number of required respondents being 714. Adjusting for a 70% response rate **we anticipate needing to sample a minimum of 1000 people nationally**.

2.3 Give details of the planned statistical analyses:

The collected data will be free of personal identifiers and will be stored in a password protected data base. The survey results will be analyzed using a computationally complex and intensive method called the Hierarchal Bayes estimation [43,56-58]. Hierarchal Bayes will be used to establish utility coefficients and importance scores for each attribute for each participant using Sawtooth software. Utility coefficients reflect the relative influence of each attribute on treatment preferences. Importance scores will show the relative influence of variations in the levels of each attribute on participant choices. We will compute latent class segmentation analyses which will examine physicians with various specific treatment preferences. Chi square and analysis of variance will be used to study demographic and attitudinal data.

2.4 What is the estimated cost and duration of this innovation/study?

The cost for this innovative study is $62, 250.00, with $29,650.00 requested from the Department of Surgery. This study will be accomplished within a period of 16 months.

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Budget Justification:

Total Study Costs	
Research Coordinator ($34.00/hr x 750hours) + 30% fringe benefits	$33,150.00
Communication	$2,000.00
Administrative Supplies	$2,000.00
Education Tool Development	$3,500.00
Survey Development and Analysis	$15,000.00
Travel	$7,000.00
Sub-Total	$62,650.00
Collaborative Funding (NIF HHSC)	*$33,000.00*
Application Total	**$29, 650.00**

We would like to acknowledge recently awarded funding from the HHS NIF competition in the amount of $33,000. In order to meet their funding requirements the NIF was forced to reduce all awarded funding by 1/3. To this end the funding received from NIF will be used to develop the survey and pilot it locally. The additional funding requested from the Department of Surgery will be focused on the provincial and national implementation of this survey which will provide the needed data for subsequent research and interventions. With the addition of national data the results from this study will have the potential to make a significant impact on health policy surrounding obesity treatment of pediatric patients. It is also anticipated that the data will guide the development of educational tools and the tailoring of pediatric obesity treatment programs to clinician preferences to optimize the efficiency and increase utilization of pre-existing pediatric obesity treatment programs.

Research Support: We have budgeted 750 hours of research support. This includes the time to conduct the interviews, collect the data, prepare study reports, contact and follow up with participants by the Research Coordinator (RC), and once the survey is finalized the RC will contact and collect survey data for our 1000 participants through consultation with the patient centred research centre, which has extensive experience.

Communication: As this is a multicenter study across Canada, $2,000 is requested for monthly conference calls with key study specific persons at each medical school. All conference calls will need to be recorded and transcription provided.

Administration Supplies: $2,000 is requested to cover the costs of print materials, postage, faxing costs etc. associated with the survey.

Survey Development and Analysis: The patient centered research unit under the guidance of Dr. Charles Cunningham will consult in iterative meetings on the qualitative scripts for stage 1. These key information interviews will inform the attribute development and survey design of Stage 2. The unit will then consult with the team on attribute and survey design. They will provide the computers, market research software and the technical support needed to complete the internet survey process. The software that will be used for the survey development will be Sawtooth software's CBC/Web system for choice based conjoint web version 7/ CBC/Web Advanced Design Module/ Ciw System for General interviewing 500 data fields. During the analysis section of stage 2 the unit will use techniques widely used in the field of market research. First, individual standardized utility coefficients will be computed using version 5 of Sawtooth software's CBC/HB Heirchical Bayes Estimation program. Utility values reflect the relative influence of each attribute on participant choices. Next, Sawtooth Software's Latent

Class program will be used to find consumer segments with similar preferences. This formula estimates the probability of membership in each segment, producing solutions with a better fit than cluster or aggregate analysis. Finally, they will use randomized first choice simulations to predict the percentage of paediatricians, paediatric general surgeons, and family physicians in each segment who would choose different hypothetical paediatric obesity programs and educational tools.

Travel: We request $7000 to cover the cost of travel to study centres for urgent study issues if necessary to ensure survey success, as well as travel to an international meeting to present the results of this study.